

**9th Nuclear Science Training Course with Nucleonica
Karlsruhe, 25th – 26th Oct. 2007)**

Thursday, 25th Oct. 2007

Overview of Nucleonica

NUCLEONICA...Science Networking and Applications

Joseph Magill

European Commission, Joint Research Centre

Institute for Transuranium Elements

Postfach 2340, 76125 Karlsruhe, Germany

E-mail: Joseph.Magill@ec.europa.eu

Nucleonica homepage

...

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nucleonica ... web driven nuclear science

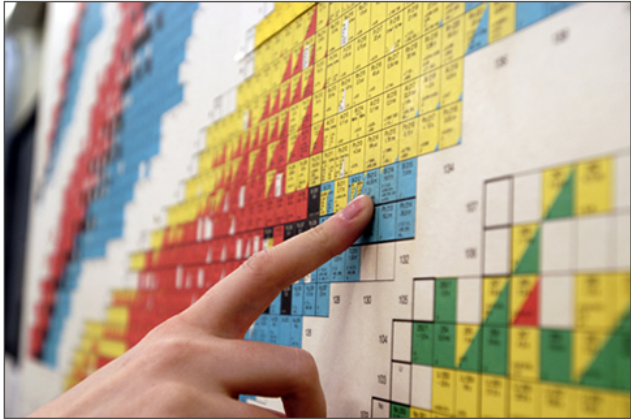
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- Welcome
- Products & Prices
- Free Trial
- Training Courses
- Educational Resources
- Karlsruhe Nuclide Chart
- News Releases
- Ask an Expert
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Sunday, September 09, 2007

username Login

Nucleonica - web driven nuclear science



NUCLEONICA HOT TOPICS

» [Nucleonica at a glance](#)

September 08, 2007

NUCLEONICA is a new science networking portal from the European Commission's Joint Research Centre. The portal provides a customisable, integrated environment and collaboration platform for the nuclear sciences using the latest internet "Web 2.0" dynamic technology.

NUCLEONICA is aimed at professionals, academics and students working with radionuclides in fields as diverse as the life sciences (e.g. biology, medicine, agriculture), the earth sciences (geology, meteorology, environmental science) and the more traditional disciplines such as nuclear power, health physics and radiation protection, nuclear and radiochemistry, and astrophysics. It is also used as a knowledge management tool to preserve nuclear knowledge built up over many decades by creating modern web-based versions of so-called legacy computer codes.

NUCLEONICA provides "software as a service" on the web rather than through installed software, adding a greater level of stability and security and avoiding version compatibility and update problems. In addition, all NUCLEONICA's web applications are browser and operating system independent and can therefore be accessed by most web browsers.

NUCLEONICA offers the following main features:

NUCLEAR NEWS

Iran Denies Plans to Build Atomic Bomb

SEP 09 Iran Denies Plans to Build an Atomic Bomb, but Says Nuclear Program Not Negotiable [...]

More For Than Against Nuclear Power - Survey

SEP 09 A total of 48% of people said they supported or strongly supported the continued use of nuclear power. Only a quarter of people saying they either opposed or strongly opposed the idea. But 89% of peop [...]

Iran denies plans to build atomic bomb

SEP 09 Speaking to an audience of Revolutionary Guards, the elite military unit that answers directly to him, Supreme Leader Ayatollah Ali Khamenei made a rare direct statement that Iran is not interested in [...]

Hosseini calls recent NAM ministerial meeting a successful event

SEP 09 Foreign Ministry Spokesman Mohammad Ali Hosseini here on Sunday called the recent Non-Aligned Movement (NAM) conference on "Human Rights and Cultural Diversity" held in Tehran as a successful event. S [...]

Nuclear fusion project gets the green light

SEP 09 Physicists have got the go-ahead to try to develop the process that powers the Sun to produce limitless, clean

nucleonica

... web driven nuclear science

[Applications](#) |
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[New Alerts](#)

> Nucleide Explorer

> Actual Chart: Karlsruhe

> Search Nucleonica Documentation

Nuclear Data Retrieval

> Application Centre

- >> Mass Activity Calculator
- >> Decay Engine
- >> Dosimetry & Shielding
- >> Range & Stopping Power
- >> webORIGEN
- >> Universal Nuclide Chart
- >> Transport & Packaging
- >> Nuclide mixtures
- >> Nucleonica Scripting
- >> Library creation for 3rd party software
- >> Radiological Dispersion Module
- >> Extended Graph Module

> Data Centre

- >> Physical Constants
- >> Nuclide Datasheets
- >> Nuclide Derived Data
- >> Average Cross Sections
- >> Radiations
- >> Prompt Gamma
- >> Fission Yields

> Knowledge Centre

- >> Nuclear News
- >> Reading room
- >> Useful Weblinks
- >> Ask An Expert

Welcome, Joe	Administration			View
Edit Preferences	MyCommunity Portal			
<hr/>				
> My Last Nuclides				
	82 Po120		85 Rn226	
	86 Rn226		55 Cs137	
	40 Zr95		84 Po120	
<hr/>				
> My Nuclide Mixtures				
	Ra-226 + daughters (1g at 1y)		Decay Engine Result	
	Ra-81 + daughters (190 µBq)		Rb81(1g)-K81m	
	Transuramics in 1 ton Spent Fuel (4.2% enriched, 50Gt/tA, 6 years cooling)			
<hr/>				
> My Sources				
	nub		natu	
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> My Messages				
	Maintenance Work		NAMLS-9 International Conference on Nuclear Analytical Methods in the Life Sciences	
	Request for photos of non-stable elements			
<hr/>				
> User Alerts				

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F0218
3.1 m

84 Polonium

84 Polonium

84 Polonium

Atomic Chart Schedule

Element Mass

Po → 210 → Nucleide History Selector

Decay Engine Options

Quantity: Counts

Time: Minutes

Start

Start in background

Reset

1

8.10E-01

Accuracy (factor):

Number of timestamps: 40

1E-02

Number of channels: 1

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1E-02

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Reset

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8.10E-01

The screenshot displays the Nucleon Data Retrieval software interface. On the left, a vertical toolbar contains icons for file operations, a search bar, and a list of data types. The main window is divided into several sections:

- Search Interface:** Includes a "Select Database:" dropdown set to "Nucleonica", a "Query" input field, and a "Run" button.
- Advanced Search:** A section with a "Radiation Search - Search Variables & Range" table.

Variable	Range
Gamma and X Rays	300 - 500
Alpha	300 - 500
- Plot Area:** A graph titled "Total Cross Section for Cl-35". The y-axis is labeled "Sigma (barn)" and ranges from 10^0 to 10^4 . The x-axis is labeled "Energy (MeV)" and ranges from 10^{-4} to 10^2 . The plot shows a series of sharp peaks, with a prominent one around 0.01 MeV. A legend indicates "Cross Section".
- Results Section:** A table titled "Search Results" showing the number of results found (10) and a list of results. The table has columns for "Energy (MeV)", "Cross Section (barn)", and "Cross Section (mbarn)".

Energy (MeV)	Cross Section (barn)	Cross Section (mbarn)
0.0144	150.2	0.01443
0.0144	899	8.94E-01
0.0145	600.8	0.0002527
0.0145	598.6	2.22E-09
0.0145	300.58	0.01821
0.0145	300.2	1.18E-01

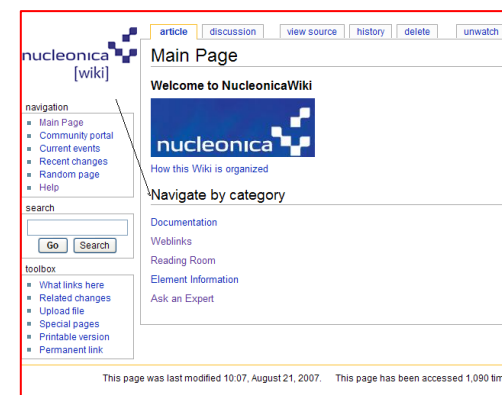
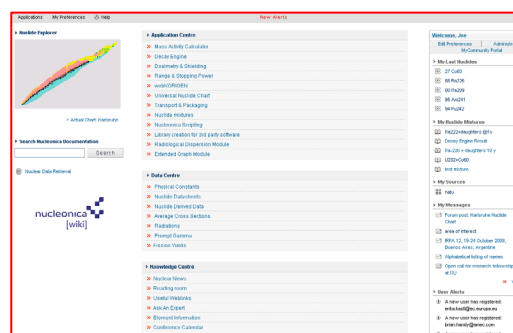
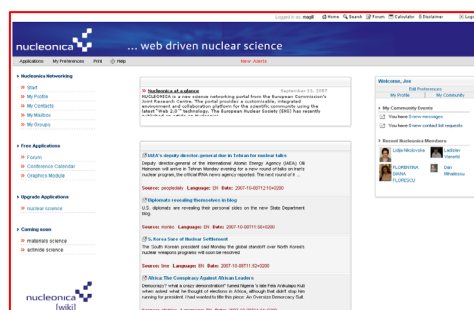
Nucleonica:

Science Networking & Applications Portal

Networking
with
Nucleonica

Nuclear
Science
Applications

Nucleonica
Wiki



This page was last modified 10.07. August 21, 2007. This page has been accessed 1,090 times.

Nucleonica Networking...

- Edit Preferences
- Main pages (My Profile, My Community, My Contacts, My Mailbox, My Groups)
- Applications (webGraphics, Calendar, forums)

Nucleonica Networking...

Logged in as: magill

Home Search Forum Calculator Disclaimer Logout

nucleonica

... web driven nuclear science

Applications My Preferences Print Help

New Alerts

> Nucleonica Networking

- >> Start
- >> My Profile
- >> My Contacts
- >> My Mailbox
- >> My Groups

> Free Applications

- >> Forum
- >> Conference Calendar
- >> Graphics Module

> Upgrade Applications

- >> nuclear science

> Coming soon

- >> materials science
- >> actinide science

nucleonica

[wiki]

>> Nucleonica at a glance

September 13, 2007

NUCLEONICA is a new science networking portal from the European Commission's Joint Research Centre. The portal provides a customisable, integrated environment and collaboration platform for the scientific community using the latest "Web 2.0" technology. The European Nuclear Society (ENS) has recently published an article on Nucleonica.

>> IAEA's deputy director-general due in Tehran for nuclear talks

Deputy director-general of the International Atomic Energy Agency (IAEA) Olli Heinonen will arrive in Tehran Monday evening for a new round of talks on Iran's nuclear program, the official IRNA news agency reported. The next round of Ir ...

Source: peopledaily Language: EN Date: 2007-10-08T12:10+0200

>> Diplomats revealing themselves in blog

U.S. diplomats are revealing their personal sides on the new State Department blog.

Source: msnbc Language: EN Date: 2007-10-08T11:58+0200

>> S. Korea Sure of Nuclear Settlement

The South Korean president said Monday the global standoff over North Korea's nuclear weapons programs will soon be resolved

Source: time Language: EN Date: 2007-10-08T11:52+0200

>> Africa: The Conspiracy Against African Leaders

Democracy? what a crazy demonstration!" fumed Nigeria's late Fela Anikulapo Kuti when asked what he thought of elections in Africa, although that didn't stop him running for president. I had wanted to title this piece: An Oversize Democracy Suit.

Source: allafrika Language: EN Date: 2007-10-08T11:44+0200

Welcome, Joe

Edit Preferences

My Profile My Community

> My Community Events

- You have 0 new messages
- You have 0 new contact list requests

> Recent Nucleonica Members

	Lidija Nikolovska		Ladislav Viererbl
	FLORENTINA DIANA FLORESCU		Dan Mihailescu

Edit Preferences...

My Preferences

My Preferences Settings

First name:

Joe

Family name:

Magill

Organization:

European Commission, Institute for Transuranium Elements

Address:

ostfach 2340, 76125 Karlsruhe, Germany

Postcode:

2340

Country:

Germany

Phone:

Fax:

E-Mail:

Joseph.Magill@ec.europa

Login:

magill

New password:

Repeat new password:

☐ Use nuclear science portal

Alerts

☒ Alert if someone replies to one of my forum entries

☒ Send email alerts

Graph Settings

Width of graphs (for export):

500

Height of graphs (for export):

400

Save Settings

Nucleonica "Start" page...

Applications
My Preferences
Print
Help
New Alerts

» Nucleonica Networking

- » Start
- » My Profile
- » My Contacts
- » My Mailbox
- » My Groups

» Free Applications

- » Forum
- » Conference Calendar
- » Graphics Module

» Upgrade Applications

- » nuclear science

» Coming soon

- » materials science
- » actinide science

nucleonica [wiki]

» Nucleonica at a glance September 13, 2007

NUCLEONICA is a new science networking portal from the European Commission's Joint Research Centre. The portal provides a customisable, integrated environment and collaboration platform for the scientific community using the latest "Web 2.0" technology. The European Nuclear Society (ENS) has recently published an article on Nucleonica.

» Yushchenko expects to obtain agreements "on certain practical issues" from the EU

Ukrainian President Viktor Yushchenko has announced at the opening of the 11th Ukraine-EU Summit in Kiev that "Ukraine is interested in certain practical issues"...

Source: regnum Language: EN Date: 2007-09-14T13:11+0200

» Rice: United States is working to stop nuclear proliferation

US foreign secretary makes comment in response to question about Syria building nuclear reactor with North Korean help; Syria denies report.

Source: jpost Language: EN Date: 2007-09-14T12:22+0200

» UN backs Iran-IAEA agreement...

LONDON, September 14 (IranMania) - UN Secretary-General Ban Ki-Moon expressed his support for the recent agreement reached between Iran and the International Atomic Energy Agency (IAEA), Islamic Republic News Agency reported. In a meeting with Iran's permanent Representative to the United Nations....

Source: iranmania Language: EN Date: 2007-09-14T11:46+0200

» China welcomes Iran-IAEA nuclear plan ...

LONDON, September 14 (IranMania) - China welcomed Iran's nuclear transparency deal with UN inspectors, despite Western fears that it could be a recipe for delay, Reuters reported. The August 21 "work plan" with the International Atomic Energy Agency (IAEA) commits Iran to answer longstanding....

Welcome, Joe





Edit Preferences

My Profile My Community

» My Community Events

- You have 0 new messages
- You have 0 new contact list requests

» Recent Nucleonica Members

 Ceren Kutahyalı	 Piotr Gaczynski
 Cem Gök	 Asun Fernandez Carretero

My Profile...

Example:

Sándor SZAKÁCS
















GIG - Central Mining Institute, Katowice



[Send message](#)
[Add to Your Contact List](#)

Name	Sándor SZAKÁCS
Location	Katowice, Poland
Nationality	hungarian-romanian
Organization	GIG - Central Mining Institute, Katowice
Address	Egressy utca 24-26. 2360 GYAL, Hungary
Job Title	contract scientist (Marie Curie ToK)
Areas Of Interest	thermoluminescent dosimetry, environmental aerosol radioactivity monitoring
Latest Publications	Preparation and investigation of thermoluminescence properties of CaSO ₄ :Tm,Cu. by: I. Kása, R. Chobola, P. Mell, S. Szakács, and A. Kerekes . In: Radiat Prot Dosimetry 2007 123 (1): 32-35; Radiation Exposure of Medical Staff Due to Iodine-131 Therapy of Hyperthyroidism and Thyroid Cancer , by: Andor Kerekes, Sándor Szakács, Teréz Séra, István Sinkovics, Sándor Pellet, and László Pávics, in: Central European Journal of Occupational and Environmental Medicine 2004; 10(3):246-251 . Characterization of CaSO ₄ -based dosimeter materials with PGAA and thermoluminescent methods, by: I. Szentmiklósi, Zs. Révay, R. Chobola, P. Mell, S. Szakács, I. Kása, in: Journal of Radioanalytical and Nuclear Chemistry, Vol. 267, No.2 (2006) 415-420.
E-Mail	szakacs@t-email.hu
Phone	+36305891968
Products (TLD)	High Quality CaSO ₄ base TLD crystallite powders and glued detector disks for gamma, alpha and beta TL o
Looking for:	-second hand TLD reader, (Fimel preferred)

My Profile / My Community...

Community Members		
Pending Contacts		
<input checked="" type="radio"/> all Users <input type="radio"/> my Contacts		
<div>Search: <input type="text"/></div>		
Image	Name	Organization
	MARTINA ADORNI	University of Pisa - DIMNP - GRNSPG
	Aleksandra Schwenk-Ferrero	Forschungszentrum Karlsruhe - Institute for Nuclear and Energy Technologies
	Mikael Andersson	Westinghouse Electric Sweden AB
	Martin Badertscher	
	Remigiusz Baranczyk	European Commission DG TREN
	Enrico Barbina	Nabla Progetti Srl
	Valerio Barbina	Nabla Progetti Srl
	Bjoern Becker	Forschungszentrum Karlsruhe GmbH, Institut fuer Reaktorsicherheit
	Fabio Belloni	European Commission, DG-JRC, Institute for Transuranium Elements
	Andrey Berlizov	Institute for Transuranium Elements, EC JRC
	Yuri Bilodid	Forschungszentrum Dresden-Rossendorf
	Emilie BOSSE	CEA
	Berkant Cetinkaya	Ege University, Institute of Nuclear Sciences
	Vanessa Chisté	
	Catalina Chitu	

Joint Research Centre

Community Members

Pending Contacts

all Users


my Contacts

Community Members


Pending Contacts

Users waiting for your authorization


Your authorization requests




Andrey Berlizov




J. Marvin Herndon




Bernhard Kuczera




Alfred Morgenstern




Manfred Jacobi




Daniel Freis




Wiese Hans-Werner




Volkmar Ernst




Pavel Soucek




Werner Wagner



Jan Leen Kloosterman



Philippe Jehenson



Asun Fernandez Carretero

Search:

Organization









errero	Forschungszentrum Karlsruhe - Institute for Nuclear and Energy Technologies
	European Commission, DG-JRC, Institute for Transuranium Elements
	European Commission
	Institute for Transuranium Elements
	DiaLOGIKa GmbH
	DiaLOGIKa GmbH
	DiaLOGIKa GmbH
	University of Glasgow
	University of Wuerzburg
	Institute of Chemistry, Eotvos Lorand University (ELTE)
n	Ondokuz Mayıs University, Faculty of Arts and Sciences
	Frankfurter Allgemeine Zeitung
	DiaLOGIKa GmbH

1

Page 1 of 1 (13 items)

My Mailbox...

Messages

	System Message	Request for photos of non-stable elements	06/10/2007 12:05:33	read
	Gert Rasmussen		05/10/2007 09:37:48	read Reply
	Suleyman INAN		25/09/2007 20:41:31	read Reply
	Sandor Nagy	applet	22/09/2007 20:09:36	read Reply
	System Message	Open positions at the University of Liège	21/09/2007 16:39:55	read
	System Message	NEW! The next Nucleonica training course 25/26 October 2007, Karlsruhe, Germany	18/09/2007 14:22:48	read
	System Message	IRPA 12, 19-24 October 2008, Buenos Aires, Argentine		
	System Message	Open call for research fellowships at ITU		

Open call for research fellowships at ITU

Dear colleagues, I am pleased to inform you that a new open call for research fellowships has been published: - on the ITU website: <http://itu.jrc.ec.eu.int/index.php?id=opencalls> - in today's edition of NATURE and on Naturejobs.com. www.nature.com/naturejobs Furthermore the call will be published in SCIENCE (edition of 31 August 2007) and on <http://sciencecareers.sciencemag.org/>. The deadline for applications is 30 September 2007. The schedule for interviews will be distributed as soon as possible.

Delete

Close

IRPA 12, 19-24 October 2008, Buenos Aires, Argentine

The Argentine Radiation Protection Society is hosting the 12th International Congress of the International Radiation Protection Association. It will take place in Buenos Aires (Argentina), from October 19 to 24, 2008, at the Buenos Aires Sheraton Hotel and Convention Center Call for papers: The ICPC Committee invites to submit papers on any of the Topics of the IRPA 12 Scientific Program. See below the Congress schedule. Abstracts must be received before the deadline of 1 December 2007.

Delete

Close

My Groups...

Groups
Add / Edit Group

Category: all

Groups:

- Nucleonica Developers
- Karlsruhe Nuclide Chart
- JRC-ITU Research Fellows
- 9th Nucleonica Training Course

Recently created groups

- 9th Nucleonica Training Course
- JRC-ITU Research Fellows
- Karlsruhe Nuclide Chart
- Nucleonica Developers

Biggest groups






- JRC-ITU Research Fellows
- 9th Nucleonica Training Course
- Nucleonica Developers
- Karlsruhe Nuclide Chart

9th Nucleonica Training Course

Leave Group
Delete Group
Edit Group

Founder: Joseph Magill
Category: Nuclear Science
Description: This is a Nucleonica group for the participants of the 9th Nucleonica training course.
Infos: The 9th Nuclear Science Training Course with Nucleonica will take place on October 25 and 26, 2007 in FZK-Conference Centre Ostendorthaus, Karlsruhe.
[Group forum](#)
[Wiki page](#)
Number of Users: 9

User List:

Image	Name	Organization
	Fabio Belloni	European Commission, DG-JRC, Institute for Transuranium Elements
	Andrey Berlizov	Institute for Transuranium Elements, EC JRC
	Carmen Ileana Cristache	IFIN-HH, National Institute of R&D for Physics and Nuclear Engineering
	Raymond Dreher	European Commission
	Erika Kastl	JRC-ITU

My Groups... Group Forum:

Forum > 9th Nucleonica training course

Topic	Author	Replies	Last Post
9th Nuclear Science Training Course with Nucleonica: Announcement	Joe Magill	0	21/09/2007 08:46:16
Address of Hotel and Training Center	Erika Kastl	0	28/09/2007 10:41:14
Preliminary Agenda	Joe Magill	0	04/10/2007 15:36:33
Instructions for Speakers	Joe Magill	0	05/10/2007 11:49:09

New Post
Search

Forum > 9th Nucleonica training course

Author	Message
Erika Kastl	<p>posted 28/09/2007 10:41:14</p> <p>The following hotel has been reserved for the participants of the 9th Nucleonica Training Course: Hotel Kübler Bismarckstrasse 39-43 Karlsruhe homepage: http://www.hotel-kuebler.de/ Tel: +49 (0)721 / 144-0 Fax: +49 (0)721 / 144-441</p> <p>The Training Course will be held at the: Ostendorfhäus Conference Centre Weberstrasse 5 Karlsruhe For further information (in German) see: http://ka.stadtwiki.net/Ostendorf-Haus</p> <p>For further information on the city of Karlsruhe (in English), see the Karlsruhe CityWiki at: http://ka.stadtwiki.net/Stadtwiki:TourBusStop See also (from Wikipedia): http://en.wikipedia.org/wiki/Karlsruhe</p> <p>Karlsruhe City Map: http://geodaten.karlsruhe.de/stadtplan/index.jsp?language=2 [edit] [delete] [reply]</p>
top	

Reply
Close Thread
Search

My Groups...

Group wiki page:

navigation

- Main Page
- Community portal
- Current events
- Recent changes
- Random page
- Help

search

Go Search

toolbox

- What links here
- Related changes
- Upload file
- Special pages
- Printable version
- Permanent link

[help](#)
[discussion](#)
[edit](#)
[history](#)
[delete](#)
[move](#)
[watch](#)

Help:Training Course Announcements

Contents [\[hide\]](#)

- 1 9th Nuclear Science Training Course with Nucleonica (2 day course)
 - 1.1 About the Nucleonica Training Course
 - 1.2 Who should attend
 - 1.3 Some topical areas of Nuclear Science you'll learn about...
 - 1.4 How you will benefit from this course
 - 1.5 Registration
 - 1.5.1 Participants from New Member States and Candidate Countries
 - 1.6 Programme and Topics
 - 1.7 About ITU
 - 1.8 Contact
- 2 Previous Training Courses
 - 2.1 October 2007 Karlsruhe
 - 2.2 September 2006 Ljubljana
 - 2.3 April 2006 Karlsruhe
 - 2.4 September 2005 Ljubljana
 - 2.5 April 2005 Karlsruhe

9th Nuclear Science Training Course with Nucleonica (2 day course) [\[edit\]](#)

The 9th Nuclear Science Training Course with Nucleonica will take place on October 25 and 26, 2007 in FZK-Conference Centre Ostendorfhaus, Karlsruhe.

New: Preliminary Agenda

[How to get from the hotel to the conference training centre](#)

About the Nucleonica Training Course [\[edit\]](#)

The course introduces the basic concepts of nuclear science and technology and is suitable for participants from the nuclear industry, nuclear research organizations, universities, regulatory authorities and nuclear medicine institutes. Core topics range from the history of radioactivity, nuclide charts, radiation protection and health physics through to the storage and transportation of radioactive materials. Recent exciting developments in nuclear science are highlighted in a series of special topics covering nuclear forensic science / illicit trafficking, nuclear science with high intensity lasers, environmental radioactivity, radiation hormesis and the LNT hypothesis, etc. Lectures will be followed by a series of "hands-on" case studies based on the use of the NUCLEONICA web-based applications to give the user direct experience in the above areas.

My Groups...

Group wiki page:

September 2006 Ljubljana

[edit]

8th Nuclear Science Training Course with Nuclides.net, 13th - 15th Sept. 2006, Milan Čopič Nuclear Training Centre and the Jožef Stefan Institute in Ljubljana, Slovenia

The 8th Nuclear Science training course on Radioactivity, Radionuclides and Radiation with Nuclides.net was held at the Milan Čopič Nuclear Training Centre in collaboration with the Jožef Stefan Institute in Ljubljana, Slovenia from the 13th to 15th of September, 2006.

The three day course covered a wide range of topics in the field of nuclear science and technology. The unique feature of this course was the emphasis on interactive and hands-on learning through the use of the ITU software package Nuclides.net - a powerful and versatile web-based software package for calculations on radio-nuclides and their radiation. With examples, exercises and dedicated case studies in Nuclides.net, a whole variety of core and topical issues in nuclear science and technology were presented by experts in their respective fields.

Special lectures on Environmental Radioactivity were given by Dr. Bogdan Pucelj from the Jozef Stefan Institute, Dr. Paolo Peerani, JRC Ispra on Safeguards and Non-Proliferation, and Dr. Tomaž Žagar from GEN-energija, Slovenia on Nuclear Science with High Intensity Lasers. The lectures were complemented by a visit to the TRIGA reactor and the Jožef Stefan nuclear training centre. A total of thirty-seven participants, around half of them women, from new EU member countries and candidate countries, and with a diverse range of backgrounds attended the course. In addition, there were participants from Germany, Russia and Spain. Among them were students, academics and industry professionals from fields such as nuclear medicine, radiation protection, environmental radioactivity and reactor physics. Following the course, an article was published in the main Slovenian newspaper DELO entitled (Nuclides.net...) "The Valuable Assistant for the Nuclear Profession".

[Downloads from Event](#)



Group Photo Sept. 2006, Ljubljana



Applications...

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New Alerts

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> Free Applications

- >> Forum
- >> Conference Calendar
- >> Graphics Module

> Upgrade Applications

- >> nuclear science

> Coming soon

- >> materials science
- >> actinide science

nucleonica [wiki]

>> Nucleonica at a glance September 13, 2007

NUCLEONICA is a new science networking portal from the European Commission's Joint Research Centre. The portal provides a customisable, integrated environment and collaboration platform for the scientific community using the latest "Web 2.0" technology. The European Nuclear Society (ENS) has recently published an article on Nucleonica.

>> Yushchenko expects to obtain agreements "on certain practical issues" from the EU

Ukrainian President Viktor Yushchenko has announced at the opening of the 11th Ukraine-EU Summit in Kiev that "Ukraine is interested in certain practical issues"...

Source: regnum Language: EN Date: 2007-09-14T13:11+0200

>> Rice: United States is working to stop nuclear proliferation

US foreign secretary makes comment in response to question about Syria building nuclear reactor with North Korean help; Syria denies report.

Source: jpost Language: EN Date: 2007-09-14T12:22+0200

>> UN backs Iran-IAEA agreement...

LONDON, September 14 (IranMania) - UN Secretary-General Ban Ki-Moon expressed his support for the recent agreement reached between Iran and the International Atomic Energy Agency (IAEA), Islamic Republic News Agency reported. In a meeting with Iran's permanent Representative to the United Nations....

Source: iranmania Language: EN Date: 2007-09-14T11:46+0200

>> China welcomes Iran-IAEA nuclear plan ...

LONDON, September 14 (IranMania) - China welcomed Iran's nuclear transparency deal with UN inspectors, despite Western fears that it could be a recipe for delay, Reuters reported. The August 21 "work plan" with the International Atomic Energy Agency (IAEA) commits Iran to answer longstanding....

Welcome, Joe





Edit Preferences

My Profile My Community

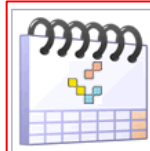
> My Community Events

- You have 0 new messages
- You have 0 new contact list requests

> Recent Nucleonica Members

	Ceren Kutahyali		Piotr Gaczynski
	Cem Gok		Asun Fernandez Carretero

Conference Calendar...




Nucleonica Conference Calendar

Conferences My Conferences

September 2007						
Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
27	28 Maintenance contract - first draft new start page docs to wiki phone Miller	29 new start page sent - forum qu. decay heat -	30	31	1	2
3 10:30: 'AGS-Belehrungsraum' Wing D - Room 110 c.	4	5	6	7 14:00-16:00 hrs: Actinide Unit meeting, Wing E	8	9 GLOBAL 07
10 GLOBAL 07	11 GLOBAL 07	12 GLOBAL 07	13 14:00 Green Room KET meeting GLOBAL 07	14	15	16 European Nuclear Conference ENC 2007, Brussels
17 Nucleonica presentation to ITU Research Fellows	18	19	20	21	22	23
24	25	26	27	28	29	30
1	2	3	4	5	6	7

14 September 2008 [Physor '08: International Conf. Physics of Reactors](#)
 09 June 2008 In Situ Nuclear Metrology as a Tool for Radioecology
 International Symposium, CNESTEN-Radioprotection of Environment, 2008. E-mail: insinume2008@yahoo.com, B.P. 1382 R.P. 10001-Rabat (Morocco). Tel.: +212.37.81.97.59- Fax: +212.37.80.30.67.
 25 February 2008 PARTRA P&T Cluster Meeting
 01 December 2007 [IRPA 12 Deadline!](#)

Conference Calendar...



Nucleonica Conference Calendar

Conferences
My Conferences

Add new conference

September 2007

Mo	Tu	We	Th	Fr	Sa	Su
27	28	29	30	31	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
1	2	3	4	5	6	7

My existing conferences

- Physor 08: International Conf. Physics of Reactr
- PARTRA P&T Cluster Meeting (25/02/2008)
- IRPA 12 Deadline!! (01/12/2007)
- International Conference on Illicit Nuclear Traffi (meeting BfS (15/11/2007)

Delete

Number of days: 1

Conference Name:

Description:

Conference Web Site:

☐ Share with other users

Add new conference

NucleonicaWiki...

- Main page
- Help
- Example: Radioactive Decay

NucleonicaWiki...

Joint Research Centre


Applications

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» Radiations

» Prompt Gamma

» Fission Yields

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» Nuclear News

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» Useful Weblinks

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Welcome, Joe

Edit Preferences

Administration

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» My Last Nuclides

» 27 Co60

» 88 Ra226

» 88 Ra209

» 95 Am241

» 94 Pu242

» My Nuclide Mixtures

» Ra222+daughters @1y

» Decay Engine Result

» Ra-226 + daughters 10 y

» U232+Co60

» test mixture

» My Sources

» natu

» My Messages

» Forum post: Karlsruhe Nuclide Chart

» area of interest

» IRPA 12, 19-24 October 2008, Buenos Aires, Argentine

» Alphabetical listing of names

» Open call for research fellowships at ITU


» User Alerts

» A new user has registered: erika.kastl@ec.europa.eu

» A new user has registered: brian.handy@amec.com

» A new user has registered:

NucleonicaWiki...



navigation

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Library Creation for 3rd party software	Mass Activity Calculator	Mobile Portal
Modules, Packages & Prices	Nuclear Media Monitor	Nucleonica Database
Nucleonica at a glance	Nuclide Explorer	Nuclide mixtures
Nuclides.net	Nuclides 2000	Overview of Nucleonica
Physical Constants	Portal	Primordial Nuclides in Nucleonica
Radioactivity in a Suitcase	Range & Stopping Power	Reference Data
Reference Notes	Scripting language documentation	Scripting language general
Transport & Packaging	Universal Nuclide Chart	WebKORIGEN

Radioactive Decay Chains

It is very often the case that the daughter product of a nuclear decay is also radioactive. In such cases one speaks of radioactive decay "chains". As an example, consider the decay chain $Q_1 \rightarrow Q_2 \rightarrow Q_3 \rightarrow \dots$ in which the starting or "parent" nuclide Q_1 decays to the "daughter" Q_2 . This daughter in turn is radioactive and decays to Q_3 . More generally each nuclide in the decay chain Q_i can "branch" to more than one daughter. In addition, there may be an external source term S_i for the production of Q_i (apart from the decay of the parent).

The situation for successive radioactive decay is shown schematically in fig. 1. This general process of radioactive decay was first investigated systematically by Bateman (Proc. Camb. Phil. Soc. 16 (1910) 423. See also Skrabble, K., et al., Health Physics, 27, 1974, 155-157).

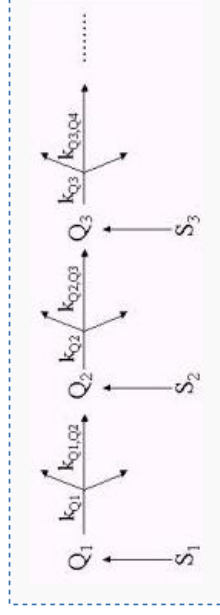


Figure 1. Successive radioactive decay with branching and source terms.

The differential equation governing the above processes can be written as:

$$\begin{aligned}
 \frac{dQ_1}{dt} &= S_1 - k_{01} \times Q_1 \\
 \frac{dQ_2}{dt} &= S_2 + k_{01,02} \times Q_1 - k_{02} \times Q_2 \\
 &\dots \\
 \frac{dQ_{i-1}}{dt} &= S_{i-1} + k_{0_{i-1},0_i} \times Q_{i-1} - k_{0_i} \times Q_i \\
 &\dots \\
 \frac{dQ_n}{dt} &= S_n + k_{0_{n-1},0_n} \times Q_{n-1} - k_{0_n} \times Q_n
 \end{aligned}$$

where Q_n is the number of atoms of species n present at time t , k_{0_n} is the decay constant (total removal constant) for species n ($k = \ln 2 / t = 0.69315 / t$), $k_{0_{n,p+1}}$ is the partial decay constant (partial removal constant) and is related to the branching ratio

[edit]



H. Bateman

Mr Bateman, *Solution of a system of differential equations, etc.* 423

The solution of a system of differential equations occurring in the theory of radio-active transformations. By H. BATEMAN, M.A., Trinity College.

[Read 21 February 1910.]

1. It has been shown by Prof. Rutherford * that the amounts of the primary substance and the different products in a given quantity of radio-active matter vary according to the system of differential equations,

$$\begin{aligned}
 \frac{dP}{dt} &= -\lambda_1 P \\
 \frac{dQ}{dt} &= \lambda_1 P - \lambda_2 Q \\
 \frac{dR}{dt} &= \lambda_2 Q - \lambda_3 R \\
 \frac{dS}{dt} &= \lambda_3 R - \lambda_4 T \\
 &\dots \dots \dots
 \end{aligned} \quad \dots \dots \dots (1),$$

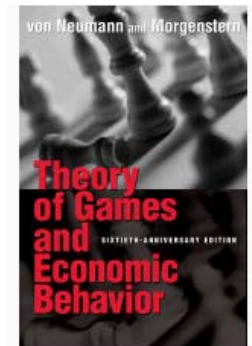
where P, Q, R, S, T, \dots denote the number of atoms of the primary

What are the advantages of Nucleonica networking?

- Represent yourself and your Institute/Organisation in the international science community and share your views and ideas. (My Profile/My Groups)
- Meet scientists from your areas of interest and build up an international contact list. (My Community/My Contacts)
- The groups and their forums provide a very powerful team-working and problem solving environment. (My Groups). Organise your own meeting, workshop, conference with My Groups – no need for your own webpage/webserver etc.
- Stay in contact with all your colleagues whether from previous employment, workshops or conferences.



John von Neumann in the 1940s



60th anniversary edition, 2004

END...